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ABSTRACT

Operation Waste Watch is a series of seven sequential learning units which addresses the subject of litter control and solid waste management. Each unit may be used in a variety of ways, depending on the needs and schedules of individual schools, and may be incorporated into various social studies, science, language arts, health, mathematics, and artistic activities. Each unit consists of a teacher's guide, filmstrip-cassette set, activity cards, test materials, duplicating masters, and a poster. This document contains the teacher's guide and activity cards for the fourth-grade unit entitled "Let's Waste Less Waste." In this unit, students examine changes which can be made in their homes to reduce solid waste and litter. They also explore various sources of litter in their communities. Twelve individual- and 17 class-activity cards are included. (CW)

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Operation Waste Watch

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Let's Waste Less Waste

ED 302561
SE 051653

Level 4

Teacher Guide

DEPARTMENT OF WASTE MANAGEMENT
DIVISION OF LITTER CONTROL & RECYCLING
Eleventh Floor, Monroe Building
Richmond, Virginia 23219

INTRODUCTION

OPERATION WASTE WATCH is a series of 7 sequential learning units which addresses the subjects of litter control and solid waste management. The curriculum, developed by the Division of Litter Control, Virginia's state litter prevention agency, is designed for classroom use in kindergarten through grade six.

Each OPERATION WASTE WATCH unit may be used in a variety of ways, depending on the needs and schedules of individual students and schools. Each unit is interdisciplinary in approach and may be incorporated into the various science, social studies, and health curricula Virginia teachers are presently using. Language arts, mathematics, and artistic activities are also highlighted. Each unit consists of a teacher's guide, filmstrip-cassette set, activity cards for class and individual student use, test materials, coloring book duplicating masters or comic books, and a colorful poster. Each elementary school in Virginia may receive a complete set of OPERATION WASTE WATCH without cost.

Flexibility is a key element of the OPERATION WASTE WATCH program. The sequence of the units within the curriculum may be changed to suit the abilities of students in the individual school. For this reason, teachers should become familiar with each of the units. Each instructor should also feel free to present concepts found in previous units. This is especially important for upper elementary students who are unfamiliar with the solid waste vocabulary and ideas presented in earlier units. The materials in each unit are color-coded for easy identification.

The teacher is free to shorten or lengthen the series of activity cards which are the heart of the unit, to suit her/his schedule or to build her/his own unit around the OPERATION WASTE WATCH auxiliary materials.

OPERATION WASTE WATCH is based on WASTE IN PLACE, the elementary school curriculum recently created by Keep America Beautiful. Solid waste management has become a very important environmental topic, but it is a subject which is too often superficially addressed in elementary textbooks.

WASTE IN PLACE was the first sequential elementary curriculum in the United States to address the concepts of proper waste handling. WASTE IN PLACE is available at cost to all localities around the country organized under the Clean Community System of Keep America Beautiful and to other interested groups. In developing OPERATION WASTE WATCH for Virginia's elementary schools, the Division of Litter Control changed the format of WASTE IN PLACE and designed supplementary activities and materials, including audiovisual aids.

OPERATION WASTE WATCH differs significantly from WASTE IN PLACE in its approach to the subject matter only in Levels 2 and 3. The Division believes that the ideas presented in these 2 units merit special emphasis in a study of solid waste problems in Virginia. Level 2, LITTER POLLUTION, addresses pollution problems associated with litter, while Level 3, TRASH TRENDS, examines packaging trends in relationship to current solid waste problems.

Field Testing

Two versions of OPERATION WASTE WATCH were piloted during the 1979-1980 school year in over 125 classrooms in 14 school systems with very positive results. A summary of the results of this field testing is available from the Division. Based on the results of the piloting, portions of the draft curriculum were revised in the fall of 1980.

Changing Littering Behavior

In addition to equipping students with important facts about litter and solid waste management, OPERATION WASTE WATCH is designed to help students modify their everyday waste disposal habits.

A study of students' waste disposal behavior was conducted in the spring of 1980 by two psychologists from Virginia Polytechnic Institute and State University, Mr. John Cope and Dr. Scott Geller. Their study confirmed that students learn from involvement with OPERATION WASTE WATCH. Student test performance following the curriculum was statistically higher than performance on the pretest. (Grades 1, 4 and 6 were the levels involved in the study.) Almost all of the teachers indicated that the OWW program materials were interesting to the students.

Most of the teachers felt that their students' littering be-

havior had decreased as a direct result of the program. The Division of Litter Control encourages teachers to emphasize recycling and the proper disposal of wastes. With continued positive reinforcement of proper behavior, and practice by the children of proper disposal techniques, teachers will see an even greater reduction in littering behavior.

The Virginia Plan: A Model Program to Prevent Littering

The DIVISION OF LITTER CONTROL was established in 1977 to control, prevent, and eliminate litter from the state to the maximum practical extent.

One-half of Division funds are granted annually to the localities of the state to finance local litter prevention programs. Over 90% of the counties and cities annually apply for and receive grant money from the Division. To assist these localities in organizing effective, comprehensive, long-range litter control programs, the Division has developed an organizational package, THE VIRGINIA PLAN: A MODEL PROGRAM TO PREVENT LITTERING, which is available to all community leaders interested in developing local programs. OPERATION WASTE WATCH is one component of THE VIRGINIA PLAN.

The Division is encouraging local litter prevention coordinators to work closely with schools in each locality. Many localities are promoting the implementation of OPERATION WASTE WATCH in their schools.

CONTACT THE DIVISION OF LITTER CONTROL FOR THE NAME AND PHONE NUMBER OF THE LITTER CONTROL COORDINATOR IN YOUR LOCALITY.

OPERATION WASTE WATCH UNIT TOPICS

Level K

Natural and Man-Made Objects

Students practice classification skills and learn to differentiate between natural and man-made objects in indoor and outdoor environments. They also learn to identify litter.

Level 1

Waste Out of Place

Students classify objects into two categories, "waste objects" and "useful objects." In addition, they learn to identify litter and dispose of their own waste items properly.

Level 2

Litter Pollution

Students study the negative effects of littering: injury to humans and animals, environmental pollution, and wasted resources. In addition, they explore a littered area, study the characteristics of litter, and learn how to clean it up.

Level 3

Trash Trends

Students trace historical changes in consumption and packaging. They also study the roles of packaging in everyday life and learn the meaning of "biodegradable."

Level 4

Let's Waste Less Waste

Students examine changes which can be made in their homes to reduce solid waste and litter. They also explore various sources of litter in their communities.

Level 5

Trash Treasures

Students discover that while many things are recycled by nature, quite a number of modern products must be recycled by people. They learn that recycling and resource recovery can help save important resources which are often lost when items are tossed into a trash receptacle.

Level 6

Community Solutions for Solid Waste Pollution

Students study their own locality's solid waste problems and design a model waste disposal plan for an imaginary community.

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LEVEL 4

RATIONALE

This series of instructional materials, developed by the Division of Litter Control, is designed to help elementary students deal effectively with solid waste problems encountered in their everyday lives. It will also prepare them to deal as adults with the growing problem of waste disposal facing each community. In Virginia, litter pickup alone is estimated to cost $25 million annually.

Litter is a very accessible pollutant and one even young children can comprehend. Children may be able to do very little to solve other environmental problems; but they can learn to dispose of waste properly, help recycle some items, and come to understand how their own behavior affects the environment. A solid waste management unit is an excellent place to begin creating environmental awareness. From this point we can begin building in our youth a strong sense of environmental stewardship and pride.

In this unit, fourth graders are asked to deal with solid waste management problems in their homes and neighborhoods. The principles emphasized here are enlarged upon to encompass the entire community's solid waste management problems in the fifth and sixth grade units of OPERATION WASTE WATCH.

If your students have not studied earlier units of OPERATION WASTE WATCH, feel free to borrow ideas, activities, and filmstrips from previous kits to prepare your students for the Level 4 ideas.

MAJOR IDEAS OF THE LEVEL 4 UNIT

1. People learn a great variety of habits as they grow up.
2. Some people have developed habits of littering and mismanaging trash.
3. A large amount of solid waste is generated each week by family units, school classes, and communities.
4. People can quite easily make a few improvements in the way they manage solid waste. These changes would decrease litter and other solid waste problems.

5. There are several sources of litter in a community. These include:
    1. Household trash disposed of improperly
    2. Commercial refuse disposed of improperly
    3. Debris mismanaged at loading docks
    4. Debris mismanaged at construction sites
    5. Uncovered trucks
    6. Pedestrians
    7. Motorists

UNIT OBJECTIVES

At the completion of the unit, the student will be able to:

1. TRACE the usual way trash is handled in a typical American home;
2. ESTIMATE the amount of trash generated in a household in one day, week and year;
3. CLASSIFY the different products going into household and school trash;
4. DESIGN a system for family and/or neighborhood refuse disposal which minimizes littering and also decreases the amount of solid waste which must go to a landfill;
5. DEFINE "habit" and "norm";
6. DEFINE "litter" and IDENTIFY a few reasons why littering is an undesirable habit;
7. IDENTIFY sources of litter in a typical neighborhood;
8. RECOGNIZE that each person is responsible for disposing of refuse in a responsible manner.

ELEMENTARY SCIENCE PROGRAM OBJECTIVES

The following program objectives should be emphasized in Level 4 science programs throughout Virginia and are incorporated into this unit (see reference 3, pg. 8):

1. Observing—The student will use all senses in the identification of objects and their properties, changes in properties, controlled observations, and ordering of a series of observations.
2. Classifying—The student will classify objects, actions, and phenomena.
3. Measuring—The student will demonstrate the ability to use standard units of measurement in determining length, area, volume, weight, and temperature.
4. Collecting and Organizing Data—The student will collect and organize information about a problem, communicate

it verbally or graphically, and present these data so that trends can be analyzed.

5. Utilizing Equipment—The student will assemble and use the appropriate tools and apparatus needed to investigate a problem.
6. Summarizing—The student will describe orally, in writing, or nonverbally, conclusions about the processes and products of scientific inquiry.

INSTRUCTIONAL STRATEGY

1. Review this teacher's guide and study all unit components thoroughly. Also become familiar with the other OPERATION WASTE WATCH units.
2. Decide which elements of the unit kit and which activity cards you will use. Add your own ideas as necessary or pull activities from OPERATION WASTE WATCH UNITS on other grade levels.
3. Prepare all necessary materials and arrange for any outside speakers or field trips.
4. **Be sure to find out what your community is doing to fight the littering problem. Contact the Division of Litter Control or your local government.**
5. Administer the pretest to your students. Use the results to modify your unit plans as necessary.
6. Briefly discuss the topic and title of the unit with your class. Tell the students about some of the activities they will be involved in.
7. Explain the contents of the unit kit to your students.
8. Hang the poster in a prominent spot in your classroom.
9. Present the filmstrip to the class. During the showing, stop the filmstrip to allow for discussion of important ideas.
10. Order the **Junior Ecology Club Certificates** from the Division.
11. Proceed with the INDIVIDUAL AND CLASS ACTIVITY CARDS.
12. Present the comic books at some appropriate point in the unit. Use these as a motivational and teaching tool.
13. At the completion of the unit, present the filmstrip once again as a review activity. Elicit discussion of ideas the children have learned.
14. Administer the posttest to your students.
15. Return all unit components to the box for use by the next class.
16. **Be sure to review and reinforce proper waste disposal habits throughout the school year!**

TIME FRAME

The Level 4 unit will take approximately 6 weeks (30 thirty-minute learning sessions).

If you want to teach a shortened version of the unit, we recommend that you use only the CORE ACTIVITY CARDS. Each core card is labeled CORE in the upper left-hand corner. Using only the core activities should cut the required instructional time to 3 or 4 weeks. Another method is to use the activity cards and other materials as guidelines for developing your own shortened unit.

Allow approximately 20 minutes for administering the tests at the beginning and end of the unit. Each filmstrip viewing should take about 15 minutes.

EVALUATION INSTRUMENTS

Included in this unit are duplicating masters for the student test. Administer the test to your class just before beginning the unit. This test should be used as a screening device to identify children who will need special help. You may need to develop additional activities for these children.

Administer the test once again, immediately after the class completes the unit. Posttest results will help determine whether or not your students attained the unit objectives. Comparison of the pretest and posttest results for each student can help you determine the effectiveness of your unit.

FILMSTRIP AND CASSETTE

The filmstrip and cassette set provided with this unit is designed for use as both an introductory and review activity. Before using the ACTIVITY CARDS, present the filmstrip to the class as an introduction to the unit. This may be done in small groups or as a total class activity. Present the filmstrip again at the end of the unit as a review of major ideas.

This guide contains a copy of the filmstrip script with asterisks (*) indicating spots in the program where we encourage you to stop the cassette and filmstrip to allow for class discussion. The cassette has audible tones and should be used with a manually-operated filmstrip projector. **The filmstrip is brief and is to be used as a teaching tool. During the showing, please encourage group discussion of the ideas presented.** The script may be read aloud by an adult if for any reason a cassette recorder is not available or if this delivery method is preferred.

When the filmstrip is used as a review activity, it may be most helpful to read the script rather than use the cassette tape. Proceeding at a comfortable speed, ask the children to respond orally to the questions raised.

INDIVIDUAL ACTIVITY CARDS (IACs)

The 12 IACs are designed for use by small groups or individual students. You may hand them out to individuals, or set up learning centers using the IACs as the foundation. In some classes, the IACs may have to be combined with the CLASS ACTIVITY CARDS (CACs) and used as a lesson plan for total class activities.

You are encouraged to restructure, modify, delete, and create additional IAC activities as necessary. IACs which provide more advanced activities are marked with asterisks (*). Students who do very well on the pretest may need to complete only a few of the IAC activities.

The IACs may be used before or simultaneously with the CACs. Take time to discuss the various IAC activities with the total class as you proceed through the unit. IACs 5 through 7 definitely require class discussion.

CLASS ACTIVITY CARDS (CACs)

The 17 CACs provide a sequential set of instructional activities. They are basically a lesson plan presented in card form to simplify modifications, additions, deletions, or restructuring. The CACs are designed as total class activities.

COMIC BOOKS

In the kit box you will find 25 copies of the comic book entitled, Follow the Litter. Before teaching the unit, read the comic yourself. You may decide to design study questions based on the story to gauge your students' vocabulary and comprehension skills.

At some point during the unit, pass out the books to your students. Allow the children to read the story out loud. Discuss the theme of the comic book as a class or in small groups.

If you have extra time, you may decide to have your students act out a skit based on the story. Perhaps they could present their skit to another class, or the students could exercise their own creativity by writing and illustrating their own litter prevention comics to take home to their families.

Be sure to return the comic books to the unit box so the next class can use them.

JUNIOR ECOLOGY CLUB PROGRAM

Since the fall of 1978, the Division of Litter Control has sponsored a successful ECOLOGY CLUB PROGRAM for grades 6-12. Because of the favorable input from teachers in the lower grades, the Division has developed a JUNIOR ECOLOGY CLUB PROGRAM for students in kindergarten through grade 5 who have completed at least one unit of OPERATION WASTE WATCH. To obtain membership certificates for your students, simply **duplicate** the JUNIOR ECOLOGY CLUB ORDER FORM included in this guide and return a completed copy to the Division.

The certificates may be used simply as a final reward for your students once they have completed the OPERATION WASTE WATCH unit, or used to begin an active ecology club program with your class. A list of suggested club activities will be included with your certificates.

COMING IN THE FUTURE

A major advantage of the activity card format used in OPERATION WASTE WATCH is that additional cards may be added and revisions made at minimal expense to the Division.

The Division will continue to evaluate the program throughout the coming years. As a result of this evaluation, new and revised ACTIVITY CARDS will be developed periodically and sent to your school.

ORDERING REPLACEMENT MATERIALS FOR THIS UNIT

Replacement copies of the filmstrip, cassette, poster, teacher's guide, activity cards, and coloring/comic books for this unit may be obtained without charge from the Division of Litter Control.

DUPLICATING MASTERS

This unit contains the duplicating masters listed below. Photocopy these materials as necessary:

1. PRETEST AND POSTTEST
2. SOLID WASTE OBSERVATION FORM
3. SOURCES OF LITTER WORKSHEET

VOCABULARY

The following is a list of terms of major significance in this unit. The function of this list is, first of all, to provide a **glossary for the teacher.** We do not recommend rote memorization of these definitions. The exercises provided in the activity cards should help the students understand these terms on an experiential level. Remember, DEFINITIONS DEVELOPED WITHOUT AN EXPERIENCE BASE ARE MEANINGLESS TO CHILDREN.

As your class proceeds through this unit, we suggest that you help the students develop definitions for the terms—in their own words. Each student should be able to recognize the terms in written form by the end of the unit.

1. CONTAINER—something used to hold something else
2. DISPOSE OF—get rid of an unwanted item
3. DUMPSTER—large refuse container, usually used by apartment buildings, stores, restaurants, county governments, etc., to keep waste until it is collected by a sanitation department or other refuse hauling service
4. HABIT—an action a person does over and over again without thinking about it
5. LITTER—man-made (or man-used) solid waste that is disposed of in the wrong place or allowed to escape from a container
6. NORM—a habit shared by most people that makes them act a certain way in certain places or at certain times
7. NORMATIVE SYSTEM—a cluster of norms followed by people, which strengthens an individual habit and makes it harder to change
8. ORGANIC WASTE—things that were once alive, or products of a living thing, for example, egg shells, coffee grounds, leaves, grass cuttings, food scraps
9. RECEPTACLE—a container that is used to hold something else. As used in this unit, primarily a waste container
10. REFUSE—another word for solid waste
11. RESOURCE—something that can be used to make something else or a source of supply
12. RESOURCE RECOVERY—taking usable materials or energy out of solid waste
13. SOLID WASTE—all useless, unwanted, or discarded materials

REFERENCES

1. Division of Elementary, Secondary, and Vocational Education, Virginia Department of Education. Environmental Education Guide K-12. Richmond: n.p., 1974.
2. Division of Litter Control, Department of Conservation and Economic Development. Litter Control Project Guide for Elementary School Teachers. Richmond: Spencer's Printing, 1978.
3. Division of Science and Elementary Administration, Virginia Department of Education. Program Goals and Objectives for Elementary Science. Richmond: n.p., 1978.
4. Keep America Beautiful. Waste in Place. New York: n.p., 1979.

LEVEL FOUR FILMSTRIP

Let's Waste Less Waste (Length: 6:30)

	Narration	Visuals
1.	(Title slide)	
2.	(Credit slide)	
3.	Boy: "This cold is terrible. I think I am going to . . .	Boy About to Sneeze
4.	Boy: A-choo!	Boy Sneezing
5.	Boy: A-choo	Boy Sneezing
6.	Boy: I wonder what happened to the wastebasket?	Boy With Used Tissue
7.	Boy: I guess I'll have to use the wastebasket in the kitchen."	Boy Dropping Tissue in Kitchen Wastebasket
8.	Narrator: Do you think most people would take a used tissue from one room to another to throw it away? (*)	Floor Plan of House
9.	When this boy used a tissue to blow his nose and moved to put it in the bathroom wastebasket, he showed us that he is in the habit of disposing of waste properly.	Boy Reaching for Tissue
10.	A habit is something a person does over and over again without thinking about it.	Boy Dropping Tissue in Bathroom Wastebasket
11.	This boy also showed a second habit. He took the used tissue to another wastebasket.	Boy in Kitchen

12. He did **not** leave the tissue in the sink.	Tissue in Sink
13. And he was not in the habit of throwing tissues into the toilet, even though this would not be a bad choice.	Boy in Bathroom
14. The proper disposal of waste is a habit for many people in their homes.	Family Separating Trash for Recycling
15. A habit shared by many people that makes them act a certain way in certain places or at certain times is called a norm. (*)	Traffic Signal
16. Habits and norms help us do many things without having to give them much thought.	Boy Emptying Wastebasket.
17. Good habits can help us dispose of our trash properly without having to think about it.	Boy Dropping Tissue in Wastebasket
18. This keeps our homes neat and clean.	Living Room
19. Unfortunately, some people have poor habits which don't lead to cleanliness.	Trash Improperly Disposed of Behind House
20. For example, some people have the bad habit of dropping litter on other people's property.	Pedestrian Littering
21. These people need to learn a new habit of putting trash in the proper place.	Boy Putting Refuse in Trash Receptacle
22. People learn most of their habits when they are children.	Boy Putting Toothpaste on Toothbrush
23. How do you think we learn our habits? (*)	Boy Emptying Wastebasket
24. First, someone teaches us how to do something—like riding a bike or playing baseball.	Child Holding Baseball Bat

LEVEL 4
TEACHER CARD
OPERATION WASTE WATCH
VIRGINIA DIVISION OF LITTER CONTROL

Let's Waste Less Waste Individual Activity Cards

Introduce the INDIVIDUAL ACTIVITY CARDS (IACs) after the students have seen the filmstrip. The 12 IACs are designed for use by small groups of children or individual students. However, the IACs may be used as total class activities if it is not feasible to carry out individual or small group activities with your class. Either way, it will be helpful to periodically review the IAC ideas and activities in class discussion.

We recommend that each student complete the IACs before the CLASS ACTIVITY CARDS (CACs) are introduced. Cards containing more difficult activities are marked with asterisks (*) in the upper right-hand corners. IACs 5 through 7 require a class discussion.

To shorten the unit, we suggest you use only the CORE ACTIVITY CARDS. Core cards are labeled CORE in the upper left-hand corners.

IDEA AND OBJECTIVE NOTATIONS REFER TO NUMBERED IDEAS AND UNIT OBJECTIVES ON PAGES 1 AND 2 OF THE TEACHER GUIDE.

Several Level 4 IACs need to be completed in numbered sequence. There are several ways to use the IACs:

1. **Individual students could work alone** on single cards.
2. **One group of students could work with you** on a few cards while an aide or other adult uses some other cards with another group.
3. Three or four IACs at a time could be placed in **a Learning Center.**
4. **The majority of students could work on other tasks while you assist a small group with the IACs.** You may wish to duplicate additional sets of cards so that several children can work on the same activity simultaneously.
5. Small groups of students or individual pupils could **carry out 1 activity and then make a report** to the rest of the class.
6. If a cassette player is available, you may decide to **put the IACs on audiotape.**

Classroom Norms

A habit is a certain action a person does over and over again. For example, a person might have a habit of chewing gum, or watching television after school, or biting his or her nails. A **norm** is a **habit** which most people do, like using a knife and fork to eat meat at dinner.

Make a list on your notebook paper of **five norms** which are habits of students in the classroom. One example is listed below. Discuss your list with other students. Give your list to your teacher.

1. In our class people are usually quiet when others are speaking.
2. _____
3. _____
4. _____
5. _____

Crossing the Street

Pretend that you are watching a six-year-old child at a street crossing. Think about what you would do if the child started to cross the street on a red light.

Now think about what you would do if you were: (1) a policeman, (2) the parent of the child, (3) a little old lady with a walking cane, or (4) a child on a bicycle.

On your paper, write down what you would do in each of these 4 roles. Turn in your ideas to your teacher. Be ready to **act out** your ideas if your teacher asks you to.

Why do you think people act the way they do if they see a child start to cross the street on a red light?

We expect the child to wait for a green light, because most people follow the **norm** of waiting for a green light before crossing the street. The **norm** of crossing the street on a green light is a **habit** most people share.

Dessert Time

When do you eat dessert—before your meat and vegetables or after?

Back in the Middle Ages in the days of knights in armor, it was the norm to have sweets, cakes, candy, and pudding all through the meal. Now most of us save dessert until last.

What other norms help keep this norm strong? Copy the list below on your paper and add one other norm to the list.

1. Parents often do not let their children eat dessert until after the rest of the meal.
2. In most cafeterias, the desserts are at the end of the serving line.

Give your list to your teacher.

Some Normative Systems

Think of some norms of behavior in your school related to disposing of trash. Two norms are:

1. Most teachers put their trash in a wastebasket or trash can.
2. Students do not usually pick up litter dropped by other students in the hall.

List two other norms on your paper and give your list to your teacher.

1.
2.

Habits—Norms—Litter

Think about habits and norms you follow. Copy the following questions on your paper and circle one answer for each question. Please give honest answers. No one else will see your paper.

1. You are walking along the street eating a candy bar, and you want to get rid of the wrapper. There is no receptacle around. Where would you put the wrapper?
   a. on the sidewalk
   b. in the gutter
   c. on a pile of trash in a vacant lot
   d. in your pocket

2. You are eating lunch in the school yard. When you are finished, you take your napkin and sandwich bag to the receptacle, but it's full and overflowing. What will you do with the trash?
   a. Take it inside to throw it away.
   b. Throw it in the bushes.
   c. Put it on top of the pile by the trash receptacle.

3. You have finished lunch in the cafeteria, but you are a little bit late. The cleaning people are already beginning to wipe the tables when your cup rolls off your tray. Would you
   a. always stop to pick it up?
   b. think the cleaning people would do it for you?

Go on to IAC-6/12

CORE

4. Have you ever thrown a piece of paper on the floor of your classroom and left it there?
   Once Often Never

5. Have you ever thrown a piece of paper on the ground in the school yard?
   Once Often Never

6. If you saw someone littering, would you be likely to tell them to pick up the trash they dropped?
   Yes No

7. Parts of our school may not be as clean as they should be. Does it bother you to have trash in your school or schoolyard?
   Yes No

8. On the way home from school, you buy a beverage and drink it as you walk. Just as you finish it, you walk by a trash-covered lot next to someone's neat and clean front lawn. Where would you be **more** likely to throw the can?
   a. In the lot b. On the lawn

CORE

When everyone finishes the activity on IAC-5 and IAC-6, your teacher will lead a class discussion about it. Think about these **litter norms** before the class discussion:

a. People tend to litter where there is already litter.
b. Disposing of trash carelessly is, too often, the norm.
c. People tend to litter where they think someone will clean up after them.
d. People tend to litter where they feel the property is someone else's concern.
e. People ignore litter. Many people just put up with loose trash.

Can you add any norms to this list? If you can, write them down and tell your class about your ideas during the class discussion.

Keep your paper until after the class discussion.

CORE

Cartoons

On one half of a piece of drawing paper, draw a picture of **one source of litter.**

Examples:

—overflowing litter basket
—dumpster with trash around it
—uncovered truck
—person driving a car

Now, on the other half of the sheet, draw a picture of the **person** whose bad habit created this litter. Have him or her say something about the litter. Put the words he says inside a balloon, as in a cartoon.

Look at the drawings done by your classmates.

Now draw another picture on one half of another sheet of paper showing something bad happening because of the person littering. On the other half show the person talking about how he or she learned a good lesson.

Give your pictures to your teacher.

IDEAS 2, 3
OBJECTIVES 6, 8

How Do I Feel About Litter?

For a full 7 days, live with litter! Use the classroom (if the entire class does this card), or your room at home, (if you do this by yourself). No one will clean up after you for this week!

During the week, throw all discarded paper, old pencils, and any other objects you usually throw in a wastebasket, directly on the floor. (Note: Food products and milk containers should be put in a waste can, but do not remove this can from the room!) Write down how you feel about what is happening during this week.

Your teacher will lead a discussion of the experience. Think about these questions before the class discussion:

a. Did you find it difficult or uncomfortable to move around or work in the room?
b. How did you feel when **other** people threw trash in your area or room?

Go on to IAC-10/12

c. Can you think of ways to reduce the amount of trash which builds up each day?
d. Do you think your room looked like a nice place to work?
e. Would a visitor think your room looked like a nice place to visit?
f. Do you think someone else should always clean up after you?
g. If everyone in your school, home, and neighborhood failed to put waste in the proper containers, how would the world around us look?
h. Why do you think people litter? Think about habits and the **litter norms** on card IAC-7/12.

An "Archaeological" Dig

Examine a full trash can in your classroom. Start at the top of the can and carefully remove each piece of trash. Keep a record of what you take out and where it was in the can by drawing a diagram like the one below. After you have emptied the can, think about the answers to these questions: What do you think happened earliest in the day in your class? Why?

What do you think happened earliest in the day in the example drawn? Did someone wash the board? When might there have been an art lesson? Did someone eat something they should not eat in school?

Example

empty paint jar
math papers
drink can
newspaper
candy wrapper
lunch bags
chalk pieces
wet paper towel

Go on to IAC-12/12

Why are the lunch bags near the middle of the can?

Now use your diagram of what was in your trash can to decide what happened during the day. Decide which events happened first and second in the day, etc. When you finish, put all the trash back in the can in the same order you found it so someone else can examine it. Now list any objects you feel should **not** have been thrown away. Could any items be recycled? Give your diagram and your list to your teacher.

Try the same study with a trash can at home. Can you find out what happened in your home by studying trash? (Note: The scientific study of the life and culture of ancient groups of people, as by excavation of ancient cities, is called "archaeology." The study of people's trash is called "garbology.")

LEVEL 4
TEACHER CARD
OPERATION WASTE WATCH
VIRGINIA DIVISION OF LITTER CONTROL

Let's Waste Less Waste Class Activity Cards

The 17 CLASS ACTIVITY CARDS (CACs) are designed for you to use with a large group of students or the whole class. These cards suggest an outline of activities to develop the major ideas of solid waste management in the home and neighborhood. The CACs should be used after or in conjunction with the IACs.

To shorten the unit, use only the CORE ACTIVITY CARDS. These cards are labeled CORE in the upper left-hand corners.

Materials that you will need are listed on each card. Notice that in quite a few cases two or more cards go together. For example, CAC-4 is a continuation of CAC-3.

IDEA AND OBJECTIVE NOTATIONS REFER TO NUMBERED IDEAS AND UNIT OBJECTIVES ON PAGES 1 AND 2 OF THE TEACHER GUIDE.

Duplicate a **Solid Waste Observation Form** for each student for CAC-3 through 7.

Duplicate the **Sources of Litter** worksheet for each student for CAC-11.

Be sure to find out what your community is doing to fight the littering problem. Contact the Division of Litter Control or your local government for information. Explain the local program to your students.

CORE

Habits and Norms

Ask the children what a habit is. (A habit is an action a person does over and over again without thinking about it.)

Each child should make a list of five of their own **good** habits. Make a list of five of your own good habits, also.

Collect the lists and read some aloud without identifying the students whose lists are being read. Read your own list.

Discuss the lists with the students. Return the lists to the children.

Ask the children how habits can help us. Ask them how habits can sometimes cause us problems.

Go on to CAC-2/17

CORE

Ask for volunteers to read the lists of their own good habits out loud. As the lists are being read, have the other children check off on their own lists any habits which are mentioned. Determine which habits, that are not strictly personal, appear most frequently. Explain that frequently habits (e.g. drinking milk for breakfast) can be considered **norms.** A norm is a habit most people have that makes them tend to act in a certain way at particular times or in certain places. It is behavior that is expected and accepted, an unwritten rule. Ask how norms affect what we do in good and bad ways.

Discuss these questions, and the norms they concern, with the children:

1. Do we wait for a green light before crossing the street? Why?
2. Do we yell when playing an exciting game? Why?
3. Do we raise our hands in class when we know the answer to a question? Why?
4. Do most people eat three meals a day? Why or why not?
5. Do most people in the United States watch television? Why or why not?

The Waste Box

Ask the students to put all the wastebaskets in their homes in a closet, or the garage, or somewhere else out of sight. For this activity, have them take just one **large** wastebasket, or a box, or some other container and put it where everyone in the family can see and use it—but not where a wastebasket is usually kept. Don't have them put it in the bathroom, or in the kitchen, but perhaps in the hall or on the stairs, or in the middle of the living room. The students should ask their families to use only this container **for the next 24 hours.** All the organic waste, such as . . .

Go on to CAC-4/17

garbage, should be put where it usually goes; but all inorganic waste from the kitchen should be put in the "special" waste container.

Before they begin the activity, have the students weigh their large boxes or containers on their bathroom scales. Have them write down how much each weighs when it is empty. Also, have them measure their boxes with a ruler. After 24 hours they should weigh their containers again. (You may decide to have them use the metric system.) Demonstrate the weighing and measuring in class before they try the experiment at home.

The students should use the **Solid Waste Observation Form** to record their data. Explain the use of this data sheet and give one sheet to each student.

Go to card CAC-5/17 after they have completed this project.

NOTE: If it is not possible to carry out this activity in the students' homes, the weighing can be demonstrated in the classroom and hypothetical data may be used for CAC-5/17.

CORE

With the students' assistance, transfer the data from the individual **Solid Waste Observation Forms** to a master chart on a large sheet of paper or on the chalkboard.

Example:

(1) Child's Name	(2) Total Weight Collected	(3) No. in House	(4) Average lbs. per person per day	(5) Average lbs. per person per week	(6) Average lbs. per person per year
Cheryl Dunn's Family	12 lbs.	4	3 lbs.	21 lbs.	1,092 lbs.

Discuss: Add up all the numbers in column 6. Explain that this is how much solid waste just the members of our own families generate in 24 hours. Ask the children to imagine what our homes would look like if we did not use **any** wastebaskets, and what our communities would look like if all this waste got loose and piled up as litter. Ask the students if they understand why it is important to make sure that all waste is put out for the Sanitation Department to collect or taken to the county dumpsters.

Go on to CAC-6/17

A Trash Story

Have the students write a short story about what happened the day their families had to go to a special place in the house to dispose of waste. Discuss the stories as a class.

Ask the class if anyone at home got upset when he/she went to throw away trash. Ask why they think some people got upset. Ask them to define "habit" and "norm" in their own words.

Ask whether any people **littered** during the 24 hours. Ask if anyone left things that should have been thrown away, in the sink in the bathroom or on . . .

Go on to CAC-7/17

the floor in front of the TV. Ask whether the parents have to remind anyone to take things to the wastebasket? Ask whether any family member made another waste container out of a box or a bag and put it where the wastebaskets usually are in your home?

If a person is willing to walk all the way downstairs or down the hall to dispose of waste properly at home, do the students think that outdoors he or she would always carry a piece of trash to a litter basket? Why or why not? Ask why some people don't care about the outdoors, our playgrounds, or our neighborhood the way they do about their own homes?

Read the humorous poem, "Sarah Cynthia Sylvia Stout Would Not Take the Garbage Out!" to the class and discuss it. The poem is found on CAC-8/17. You may wish to duplicate it for each student.

Ask the class how we can encourage people to have better trash handling habits indoors and outdoors. Ask how we might establish and encourage **positive norms** concerning litter and waste disposal.

SARAH CYNTHIA SYLVIA STOUT WOULD NOT TAKE THE GARBAGE OUT!

by Shel Silverstein

Sarah Cynthia Sylvia Stout
Would not take the garbage out!
She'd scour the pots and scrape the pans,
Candy the yams and spice the hams,
And though her daddy would scream and shout,
She simply would not take the garbage out.
And so it piled up to the ceilings:
Coffee grounds, potato peelings,
Brown bananas, rotten peas,
Chunks of sour cottage cheese.
It filled the can, it covered the floor,
It cracked the window and blocked the door
With bacon rinds and chicken bones,
Drippy ends of ice cream cones,
Prune pits, peach pits, orange peel,
Gloppy glumps of cold oatmeal,
Pizza crusts and withered greens,
Soggy beans and tangerines,
Crusts of black burned buttered toast,
Gristly bits of beefy roasts . . .
The garbage rolled on down the hall,
It raised the roof, it broke the wall . . .
Greasy napkins, cookie crumbs,
Globs of gooey bubble gum,
Cellophane from green baloney,
Rubbery blubbery macaroni,
Peanut butter, caked and dry,
Curdled milk and crusts of pie,
Moldy melons, dried-up mustard,
Eggshells mixed with lemon custard,
Cold french fries and rancid meat,
Yellow lumps of Cream of Wheat.
At last the garbage reached so high
That finally it touched the sky.
And all the neighbors moved away,
And none of her friends would come to play.
And finally Sarah Cynthia Stout said,
"OK, I'll take the garbage out!"
But then, of course, it was to late . . .
The garbage reached across the state,
From New York to the Golden Gate.
And there, in the garbage she did hate,
Poor Sarah met an awful fate,
That I cannot right now relate
Because the hour is much too late.
But children, remember Sarah Stout
And always take the garbage out!

Map It—A Survey

You will need a large, detailed map of the area served by your school and straight pins with heads of two colors.

In order to plan the survey, look at the map as a class and decide if there are places in the area that are more likely to be littered than other places. Review the definition of "litter" with the students. Have the children suggest locations (shopping centers, high-density residential areas, parking lots, vacant lots, bus stops, highway entrances, etc.). Mark these locations with pins of one color.

One of the most common sources of loose refuse is household waste disposed of carelessly. Other sources of litter include poorly contained commercial waste, delivery areas that are not kept clean and neat, construction sites, and uncovered trucks carrying debris that could blow or fall off.

Arrange a tour of the mapped area with the class, on foot or by bus. On the tour, keep a record of any loose refuse. At each spot where you find a lot of litter, encourage the children to try to figure out where it came from or how it might have escaped from the proper container.

NOTE: If a tour is not possible, keep a chart of the children's daily observations of types and locations of litter in their neighborhoods.

Go on to CAC-10/17

CORE

Give each student a pin of the second color and have the student mark a spot on the map where the class found loose refuse.

(OPTIONAL:

Ask each child to draw a map of the area where he/she lives, such as a city block. Ask the children to walk around their area or block and put a square (□) on the map for every house, an "X" for every store or restaurant or other commercial building, and an "O" wherever they see a waste container such as a garbage can, dumpster, or litter basket. Tell them to put a dot (•) wherever they see loose refuse.

The next day help the students transfer the data from the individual maps to the master map.)

Go on to CAC-11/17

CORE

Discuss these questions in class:

1. What **kinds** of litter were most common?
2. Is there any pattern to where litter was found? Is it more prevalent where waste containers are present or absent?
3. If litter was prevalent in areas where there were waste containers, were the containers overflowing? Did they have lids or covers? Could animals have knocked them over, spreading the refuse around? If the containers were in good condition and not overflowing, is it possible that some people didn't even try to get their waste in the containers, but just tossed it in that general direction? Why do people sometimes "just toss" litter?
4. If litter was more prevalent where there were no waste containers, why didn't people carry their waste with them until they could dispose of it properly?
5. Did we make good guesses before we went on our walk about where litter would be found? Why or why not?
6. What could be done to encourage better habits about handling waste?

Pass out the **Sources of Litter** worksheet to the students.
Discuss the directions for completing the worksheet.
After the students complete the worksheet, discuss their responses in class.

Go on to CAC 12/17

CORE

Ask the children why they think people litter. Discuss the children's responses, being sure that blame is not placed on any individuals or groups. Emphasize that most people litter at one time or another. This does not mean we should label people as "bad" because they litter. Littering is simply a **habit** people learn, and habits can be changed. Some of the reasons people litter are listed below:

1. People litter because they think someone will pick up after them.
2. People litter because they learn it from their families and friends.
3. People litter because they do not feel the property is their concern.
4. Sometimes people litter because they have little respect for the environment or other people.
5. Sometimes people litter because they feel that a certain place is their territory, and they have a right to do what they want in this place.

A Family Plan

Refer to cards CAC-3 through 5, **THE WASTE BOX** activity, and to **A TRASH STORY**, cards CAC-6 and 7.

In these activities the class looked at what each family would do with trash for a 24-hour period.

With all the wastebaskets and refuse containers in their "regular" locations, have the class calculate the amount of solid waste each family throws away for 7 days. Have students weigh all trash cans before they start and then weigh all the refuse for a week.

Have them enter the data on a master chart like this one:

Example:

(1) Your Name	(2) Total Wt. Collected	(3) No. People in House	(4) Average lbs. per Person per Week	(5) Average per Person per Year
Jim Russell's Family	84 lbs.	4	21 lbs.	1,092 lbs.

Go on to CAC-14/17

Then ask these questions:

What does your family do with an average of 84 lbs. of trash each week? Do you separate items such as newspapers, aluminum, and glass? Do you take these items to a recycling center? Do you compact your trash into a smaller size?

After you have studied the families' trash disposal habits, as a class design a system to **improve** family trash disposal which minimizes litter, decreases the amount of solid waste which must go to a landfill, and recycles as much aluminum, glass, newspaper, and organic substances as possible.

A Neighborhood Plan

Divide the class into 3 or 4 groups.

Have each group select one area of the map (CAC-9) where litter was prevalent. Also discuss the data collected about families.

Have each group pretend to be the members of the "block or community association" in the neighborhood. Have each group **develop a plan** to help insure that all waste in the area selected is properly disposed of and put in containers.

Have the students within each group select roles as committee chairmen assigned to carry out various aspects of their plan. Have them **act out** what they would do before the rest of the class.

Have the class as a whole **vote** on what they consider the 3 or 4 better ideas from those presented by the role players. Carry out some of these ideas in the neighborhood or community.

A Class Debate

Divide the class into 2 teams to debate opposite opinions about "Solid Waste Management in the Home and Neighborhood." Possible questions:

1. Is all litter undesirable?
2. Is littering really a problem? Is litter so harmful, or blight so unattractive, that the expense of cleaning it up is worthwhile?
3. If stricter anti-littering laws were passed, would people be likely to obey them all the time?
4. Since so many people seem oblivious to the litter problem, should other people be willing to pick up after them?
5. If the only way that litter problems can be solved is through higher taxes to pay for more cleanups, should citizens be willing to contribute their own money by paying higher taxes?
6. Is littering a problem in our classroom or in our school?
7. Can new norms and personal habits be established to help people dispose of wastes properly?
8. Have the class think of other topics.

What We Can Do

As a culminating activity, ask each child to list the ways he or she could help control and reduce litter at home, at school, and in the community.

Encourage each child to share his/her list with the class.

Allow the class to select one or more of the ideas as a follow-up to this Operation Waste Watch unit. Once the unit is complete, help the class carry out their plan of action.

END

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